



Towards a tipping point in responding to change: Rising costs, fewer options for Arctic and global societies

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Abstract:

Climate change incurs costs, but government adaptation budgets are limited. Beyond a certain point, individuals must bear the costs or adapt to new circumstances, creating political-economic tipping points that we explore in three examples. First, many Alaska Native villages are threatened by erosion, but relocation is expensive. To date, critically threatened villages have not yet been relocated, suggesting that we may already have reached a political-economic tipping point. Second, forest fires shape landscape and ecological characteristics in interior Alaska. Climate-driven changes in fire regime require increased fire-fighting resources to maintain current patterns of vegetation and land use, but these resources appear to be less and less available, indicating an approaching tipping point. Third, rapid sea level rise, for example from accelerated melting of the Greenland ice sheet, will create a choice between protection and abandonment for coastal regions throughout the world, a potential global tipping point comparable to those now faced by Arctic communities. The examples illustrate the basic idea that if costs of response increase more quickly than available resources, then society has fewer and fewer options as time passes.

Source: <http://dx.doi.org/10.1007/s13280-011-0226-5>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Sea Level Rise

Extreme Weather Event: Landslides, Wildfires

Geographic Feature:

resource focuses on specific type of geography

Arctic, Rural

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

Climate Change and Human Health Literature Portal

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology:

type of model used or methodology development is a focus of resource

Cost/Economic, Other Projection Model/Methodology

Other Projection Model/Methodology: discussion only

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Racial/Ethnic Subgroup

Other Racial/Ethnic Subgroup: Native Alaskans

Resource Type:

format or standard characteristic of resource

Policy/Opinion, Review

Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

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Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content